

(Australian Petty Patent)

(54) Title  
PLATFORM FOR PLAY STRUCTURE

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(71) Applicant(s)  
THE MIDLAND BRICK COMPANY PTY LTD

(72) Inventor(s)  
STEWART MCNABB

(74) Attorney or Agent  
PATENT ATTORNEY SERVICES, 26 Ellingworth Parade, BOX HILL VIC 3128

(56) Prior Art Documents  
AU 26884/71 424124 53.5 53.2 A63B 17/04  
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(57) This invention relates to platforms for mounting to play structures of the kind which have a number of upright support posts which in use are mounted to the ground so that a framework of the play structure can be erected using the posts, the framework supporting play elements such as platforms of the kind to which the present invention relates, slides, swings, and other such play elements.

#### CLAIM

1. A platform for a play structure having a framework including upright support posts and one or more play elements mounted by the support structure, the platform comprising:

a platform surface for mounting to the framework and for supporting children using the play structure;

a plurality of elongated strengthening formations extending across the platform surface so as to contribute structural strength to the platform surface;

a plurality of elongated supports located below the platform surface and below the strengthening formations and extending in directions transverse to the strengthening formations so as to provide a structural support, the supports being secured to the platform surface or to the strengthening formations or to both, the strengthening formations and the supports together providing structural strength to the platform surface against substantial deformation and structural failure under loads placed on the play structure; and

a metal mounting frame located beneath the platform surface and extending along at least two sides of the platform with the elongated supports being supported by the mounting frame in use and the mounting frame being arranged to be mounted to the framework so as to mount the platform in a generally horizontal position within the framework.

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PATENTS ACT

PETTY PATENT SPECIFICATION

Name of Applicant(s): THE MIDLAND BRICK COMPANY PTY LTD

Actual Inventor(s): Stewart McNabb

Address for Service: PATENT ATTORNEY SERVICES,  
26 Ellingworth Parade,  
Box Hill, Victoria, 3128 Australia.

Petty Patent Specification for the invention entitled:

PLATFORM FOR PLAY STRUCTURE

The following statement is a full description of this invention,  
including the best method of performing it known to <sup>us</sup>.....:-

## PLATFORM FOR PLAY STRUCTURE

This invention relates to platforms for mounting to play structures of the kind which have a number of upright support posts which in use are mounted to the ground so that a framework of the play structure can be erected using the posts, the framework supporting play elements such as platforms of the kind to which the present invention relates, slides, swings, and other such play elements.

In the past, the platforms provided in play structures of the kind outlined above have comprised metal plates or grilles which can provide sufficient structural strength from the strength of the material itself. Alternatively, bracing supports may be provided beneath the platform material as desired. Similarly, platforms can be made of timber such as planks so that the material has sufficient intrinsic strength to support the loads encountered in use. If additional strength is required, metal bracing struts or frame members can be located beneath the timber planks.

One problem with the metal and timber platforms used at present in play structures is the relatively high cost of manufacture and/or erection of platforms using such materials. Also such materials may need specific treatment to prevent corrosion or deterioration over a period of time. The properties of plastics material, particularly resistance to corrosion or weathering and the ability to manufacture it in the final desired colours are well known. However the strength of

Possible and preferred features of the present invention will now be described with particular reference to the accompanying drawings. However it is to be understood that the features illustrated in and described with reference to the drawings are not to be construed as limiting on the scope of the invention. In the drawings:

Fig. 1 shows a perspective view of a platform for a play structure according to a possible embodiment of the present invention,

Fig. 2 shows a perspective sectional view through an edge portion of the platform shown in Fig. 1, and

Fig. 3 shows a cross sectional view through a portion of the platform shown in Fig. 1.

The platform shown in the drawings comprises a platform surface 10 shown as a generally square surface. The platform surface 10 has along the four edges ramps 11 which incline upwardly at a shallow angle to the horizontal. These ramp surfaces 11 enable a person walking on the platform to "feel" the edge of the platform without looking at it by feeling the slight raise in the surface level formed by the ramps 11. Also the upper surface of the platform 10 may have a shallow convex curvature on its upper surface for drainage purposes. The upper surface therefore can allow water to drain outwardly until the surface 10 meets with the ramp surfaces 11 where there is formed a shallow channel 12 enabling water to then run along the channels 12 for drainage purposes. At the four corners, there are four notches 13 which mate with the upright support posts of the framework of the play structure (not shown) so that the platform fits closely within four upright posts located at the four corners of the surface 10.

plastics materials, particularly relatively low cost plastics materials, can limit its usefulness as a substitute for metal and timber products.

5 It is an object of the present invention to provide a platform for a play structure having a construction which makes it suitable for manufacture in predominantly plastics material.

According to the present invention there is provided a platform for a play structure having a framework including upright support posts and one or more play elements mounted by  
10 the support structure, the platform comprising:

a platform surface for mounting to the framework and for supporting children using the play structure;

a plurality of elongated strengthening formations extending across the platform surface so as to contribute  
15 structural strength to the platform surface;

a plurality of elongated supports located below the platform surface and below the strengthening formations and extending in directions transverse to the strengthening formations so as to provide a structural support, the supports  
20 being secured to the platform surface or to the strengthening formations, or to both, the strengthening formations and the supports together providing structural strength to the platform surface against substantial deformation and structural failure under loads placed on the play structure; and

25 a metal mounting frame located beneath the platform surface and extending along at least two sides of the platform with the elongated supports being supported by the mounting frame in use and the mounting frame being arranged to be mounted to the framework so as to mount the platform in a generally horizontal position within the framework.

Extending across the surface 10 are strengthening formations 20 shown in the form of ribs 21 formed into the surface 10. As seen in Fig. 3, the ribs 21 define channels extending across the surface 10 so that these channels also inhibit slipping on the surface 10. As shown in Fig. 1, the channels formed by the ribs 21 extend past the ramp surfaces 11 to the outer edges of the platform so that the channels also assist drainage of water from the surface. The strengthening formation 20 extending across the platform surface 10 provide structural strength to the surface 10 against substantial deformation of the surface in a direction transverse to the direction of the ribs 21.

In addition to the non slip function of the strengthening ribs 21 extending across the surface 10 of the platform, the upper surface of the platform 10 may be additionally treated to reduce the slipperiness of that surface. For example, roughening or an array of upwardly extending projections may be provided over substantially the entire surface area to inhibit slipping on that surface 10.

The platform also includes a number of elongated supports 25 best seen in Fig. 2. The supports 25 are in the form of support channels located below the platform surface 10 and also below the strengthening formations 20. The support channels 25 extend in the direction transverse to the strengthening formations 20 so as to provide structural support from beneath both the strengthening formations and the platform surface 10. The support channels are secured to the strengthening formations 20 and, as seen in Fig. 3, the uppermost webs 26 of the support channels 25 are integral with the strengthening formations 20.

The platform surface, strengthening formations 20 and support channels 25 are, in the preferred embodiment, formed of plastics material. These components may be all integrally formed from plastics material by a process such as rotational moulding. A suitable plastics material may be medium density polyethylene. The plastics material can be manufactured in any desired colour thereby utilising this property of plastics material to the advantage of metal and timber.

The strengthening formations 20 and the support channels 25 together provide structural strength to the platform surface 10 against substantial deformation and structural failure under loads placed on the play structure.

In the preferred embodiment illustrated, there is provided a perimeter support frame 30 also formed integrally with the platform surface 10. The perimeter support frame 30 is shown in the general form of box frame sections extending along each of the four sides of the platform surface 10. The support frame 30 provides further structural strength at the edges of the platform surface.

The platform also includes a metal mounting frame 35 shown in Fig. 2 as a box girder 36. Preferably this box girder 36 extends along all four sides of the platform surface, beneath the support channels 25. The box girder 36 in Fig. 2 is shown extending along the direction parallel to the support channels 25. Although not shown in the drawings, there would be further box girders 36 extending at right angles to the illustrated box girder and extending transverse to the support channels 25 and lying beneath those support channels 25 to support them at their ends. The box girders 36 are shown located within the



boundaries defined by the perimeter support frame 30. In Fig. 3, the box girder 36 is illustrated showing its relationship to the perimeter frame 30. With this illustrated arrangement, it is possible if desired to insert further metallic mounting frame members such as diagonal strut 37 illustrated in Fig. 2 in broken line, strut 37 extending at a diagonal across beneath the platform while remaining at or above the lower edge of the perimeter frame 30.

The four box girders 36 extending along the four sides of the platform surface 10 may be coupled together at the four corners of the platform surface 10, or alternatively may be left as four unconnected girders. In particular, the four girders 36 may extend along the four sides of the platform surface 10 and at their opposite ends may be mounted to projecting lugs, flanges or brackets (not shown) projecting from the upright corner posts of the framework of the play structure and which are located at the notched corners 13 of the platform surface 10. In this way, the box girders 36 can be securely mounted to the framework of the play structure and thereby support the platform.

As shown in Fig. 2, mounting frame 35 shown in the form of box girders 36 can be mounted to the plastics material support channels 25 by means of bolts 38 passing upwardly through the girders 36 and into metallic inserts 39 which can be moulded into the support channels 25 during manufacturing of the platform.

It will be seen that the platform described herein and illustrated in the drawings enables a plastics material to be predominantly used. The platform has sufficient structural

strength by reason of its construction and arrangement to support loads placed thereon during use in a play structure. The cost advantages of a predominantly plastics material can be therefore achieved and also the aesthetic effects of plastics material can be enjoyed. The erection of the platform in use can be relatively simple.

It will be appreciated that variations and modifications in the construction of the platform can be achieved without departing from the scope of the invention. For example instead of strengthening formations 20 shown in the form of concave ribs 21 defining channels across the upper surface 10 of the platform, there may be provided a strengthening formations in the form of raised ribs projecting upwardly from the upper surface 10 of the platform. In this case, the support channels 25 located beneath the platform surface may be secured to or formed integrally with the under surface of the platform surface 10 rather than being secured to or formed integrally with the strengthening ribs 21.

It is to be understood that various alterations, modifications and/or additions may be made to the features of the possible and preferred embodiment(s) of the invention as herein described without departing from the spirit and scope of the invention as defined in the appended claim.

The claim defining the invention is as follows:

1. A platform for a play structure having a framework including upright support posts and one or more play elements mounted by the support structure, the platform comprising:

5 a platform surface for mounting to the framework and for supporting children using the play structure;

a plurality of elongated strengthening formations extending across the platform surface so as to contribute structural strength to the platform surface;

10 a plurality of elongated supports located below the platform surface and below the strengthening formations and extending in directions transverse to the strengthening formations so as to provide a structural support, the supports being secured to the platform surface or to the strengthening  
15 formations or to both, the strengthening formations and the supports together providing structural strength to the platform surface against substantial deformation and structural failure under loads placed on the play structure; and

20 a metal mounting frame located beneath the platform surface and extending along at least two sides of the platform with the elongated supports being supported by the mounting frame in use and the mounting frame being arranged to be mounted to the framework so as to mount the platform in a generally horizontal position within the framework.

25 Dated this 22nd day of August, 1990

PATENT ATTORNEY SERVICES

Attorneys for

THE MIDLAND BRICK COMPANY PTY LTD

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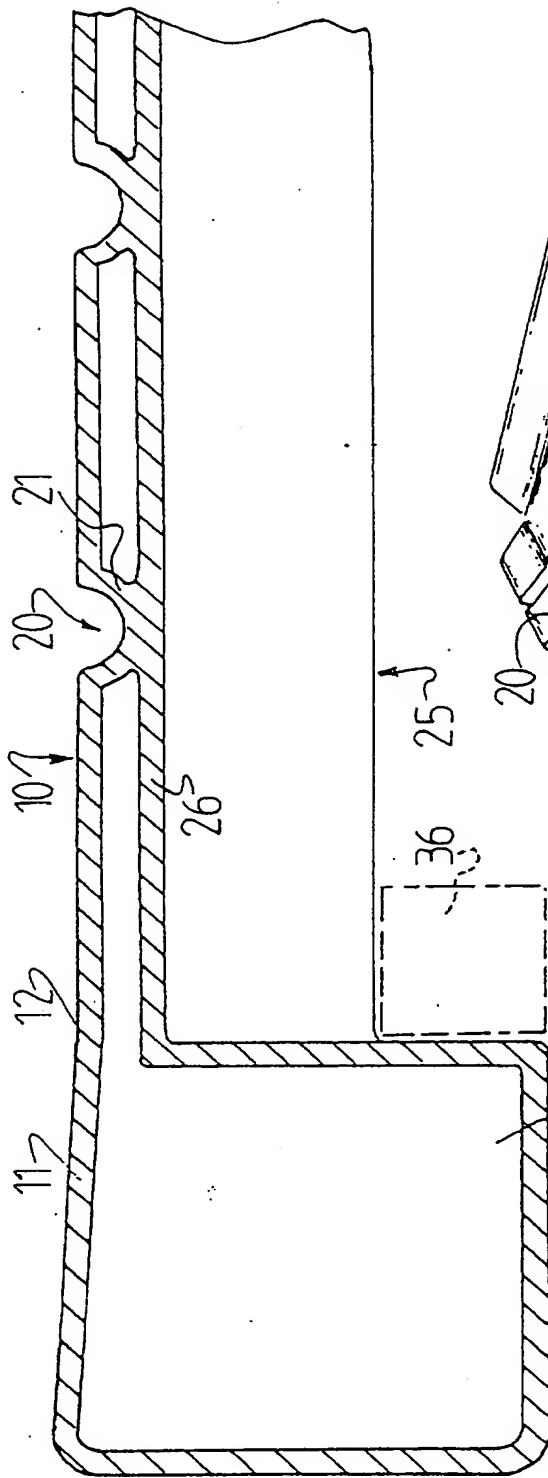


FIG. 3

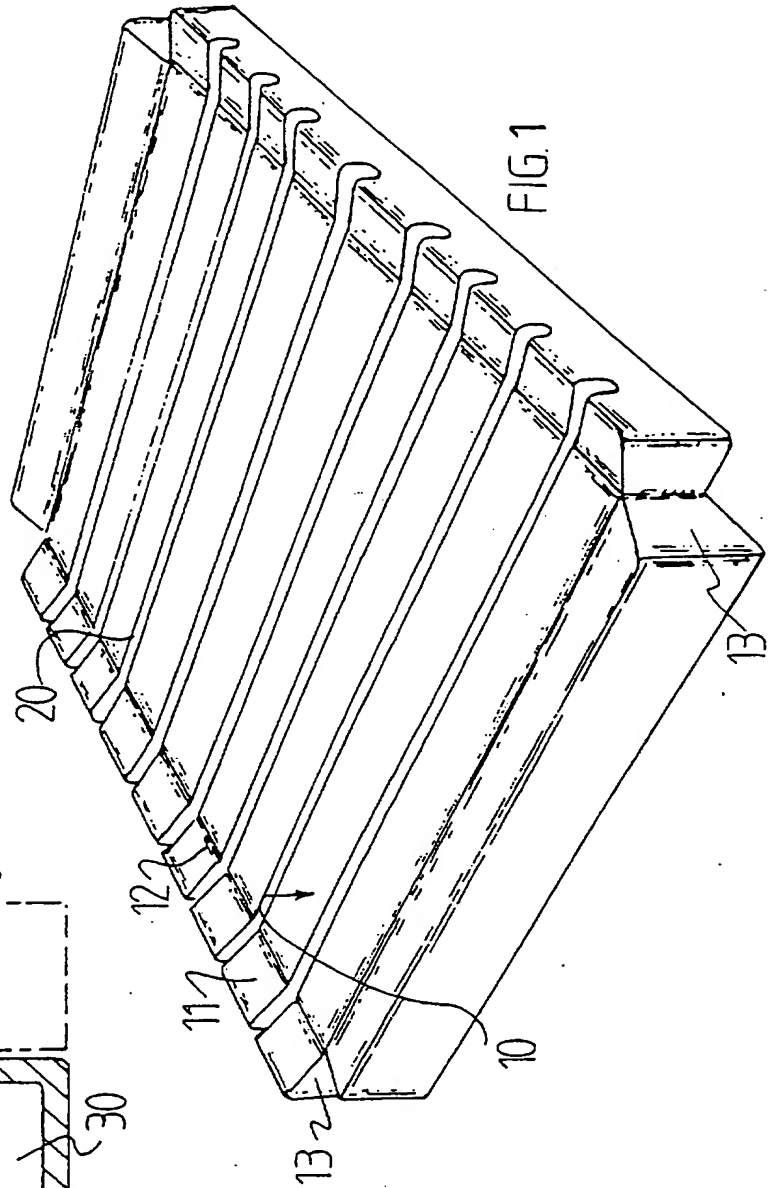


FIG. 1

